

DRAWINGS

Please amend the drawings as follows.

Replace FIG. 3 with the attached redlined drawing FIG. 3 (1 sheet).

Replace FIG. 4 with the attached redlined drawing FIG. 4 (1 sheet).

REMARKS

Claims 1-35 are pending in the application.

The Examiner objects to the drawings under 37 CFR § 1.83.

The Examiner objects to claims 1-21 for a variety of informalities.

The Examiner rejects claims 2-7 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the enablement requirement.

The Examiner rejects claims 5-7, 14-21, and 34-35 under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The Examiner rejects claims 1-2, 4-7, 14-21 and 25-35 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger et al., U.S. Patent No. 6,263,016, (“Bellenger”), in view of Biba et al., U.S. Patent No. 4,521,891, (“Biba”).

The Examiner rejects claims 3 and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger in view of Biba in further view of Green et al., U.S. Patent No. 5,949,762, (“Green”).

The Examiner rejects claims 12-13 and 22-24 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger in view of Biba in further view of Osler et al., U.S. Patent No. 6,038,222, (“Osler”).

Applicant amends claims 1, 5, 14, 15, 17-22, 25, 27-28, 33 and 35, and cancels claims 12 and 13. New claims 36-39 have been added.

Claims 1-11 and 14-39 remain in the case

Applicants add no new matter and request reconsideration.

Drawings

Applicant amends drawings 3 and 4 to obviate the Examiner’s objections.

Claim Objections

Applicant amends claims 1, 14, 15, 17, 19, 20, and 21 to obviate the Examiner’s objections.

Claim Rejections – 35 U.S.C. § 112 ¶ 1

The Examiner rejects claims 2-7 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the enablement requirement and thus “[t]he claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it pertains, ... to make and/or use the invention.” Office Action, page 4.

Applicant respectfully traverses the Examiner’s rejection by directing the Examiner to specific portions of specification, when read in conjunction with their corresponding figures, clearly enables one skilled in the art to make and use the invention as specified in the claims. See, e.g., paragraphs beginning on page 10, line 22, page 11, line 8, and page 16, line 14; and Figure 3. For instance, the specification recites “[m]odem card 50 contains ... 16 digital signal processors DSP0 through DSP15 that function as modem resources,” see, paragraph beginning on page 10, line 22, and “[e]ach DSP on modem card 50 provides state information for its current data connections, through card bus 54, to resource controller 56 at periodic intervals. Controller 56 stores state information in memory 58,” see, paragraph beginning on page 11, line 8.

From the above-recited sections of the Specification, a person of reasonable skill in the art understands that each DSP is an embodiment of a data-handling resource and thus able to make and use the invention as specified in the claims from the specification without undue experimentation. Applicant requests that in view of the above-recited references of the specification that the rejection be withdrawn.

For additional support, see page 4 of the specification, lines 12-15, “a data communication interface may comprise multiple modem cards, each [modem card] having several digital signal processors emulating modems.” Figure 1 is listed in the specification as a data communication interface including two data-handling resources. Figure 3 is listed as a modem card, which may be regarded as an embodiment of a data-handling resource.

One of ordinary skill in the art would recognize thus recognize by looking at Figures 1-3 that the modem card of Figure 3 (including the DSPs) could be used as data-handling resource 24 of Figure 1. Applicant requests that in view of the above-recited references of the specification that the rejection be withdrawn.

Claim Rejections – 35 U.S.C. § 112 ¶ 2

The Examiner rejects claims 5-7, 14-21, and 34-35 under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Applicant amends claims 14, 19, 21, and 34 to obviate the Examiner’s objections.

Applicant respectfully traverses the Examiner’s rejection as to claim 5, as the specification describes the recited *common bus*, e.g., see the specification at page 16, lines 6-

12, where each modem card 50, 70, 72, and 74 share busses 76, 78, and 82. With regard to the Examiner's statement regarding how the second digital signal processor shares a bus with the first circuit card, the claim has been amended to clarify that the *second circuit card* shares a common bus with the *first circuit card*. Applicant requests that in view of the above-recited reference to the specification that the rejection as to claim 5 be withdrawn.

Applicant respectfully traverses the Examiner's rejection as to claim 34 by directing the Examiner to specific portions of the specification to clarify "frame receipt information." For instance, the specification recites "DSP4 may delay sending ACK signals for a frame until it has fully processed and disposed of the frame, and noted the frame receipt in state memory 58." Specification, page 13, lines 20-22. ACK signals are one example of frame acknowledgement information and the frame receipt in state memory is one example of frame receipt information. Accordingly, a person of reasonable skill in the art understands *frame receipt information* as opposed to a *frame acknowledgement signal*. Applicant requests that in view of the above-recited reference to the specification that the rejection as to claim 34 be withdrawn. Claim 33 has been amended to correct a typographical error.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejects claims 1-2, 4-7, 14-21 and 25-35 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger in view of Biba. The Examiner rejects claims 12-13 and 22-24 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger in view of Biba in further view of Osler. Applicant respectfully traverses the Examiner's rejections.

Claim 1 has been amended to specify a data-handling resource controller that responds to one or more conditions indicating that data from a first data connection should no longer be directed to said first data-handling resource *due to failure or removal of said first data-handling resource*, by directing said data from said first data connection to said second data-handling resource without loss of connection. Claims 14, 19, 22, and 28 recite a similar limitation. This is clearly shown in the description starting at page 7, line 13 of the specification, among other places.

The Examiner acknowledges that neither Bellenger nor Biba disclose one or more conditions indicating that data from a first data connection should no longer be directed to the first data-handling resource *due to failure or removal of said first data-handling resource*. Oct. 26, 04, Office Action, Page 15. The Examiner alleges, with respect to claim 22, that Osler discloses the recited limitation. Nov. 3, 04, Office Action, Page 15. Osler, however, teaches the internal state functionality of an operational modem, not of a failed or removed

data-handling resource as the claims require. Osler, col. 3, lines 15-18. Thus, Osler's idle state is attained by *link* termination or *link* failure, not failure or removal of the *modem* 12 itself. The link is not a data handling resource. Therefore Osler does not suggest or disclose any response to a failure or removal of a *data handling* resource, such as the modem itself. Moreover, a transition to Osler's idle state terminates the connection, requiring a complete reconnection from an idle state. Osler, Figure 2; col. 4, lines 8-15; col. 3, lines 21-22.

Furthermore, even if Osler taught a condition due to failure or removal of said *first data-handling resource*, the combination would still fail to teach a resource internal state memory that stores internal state information for an existing data connection, the internal state information *containing data transformation* and data link control information *developed by a data-handling resource over the course of the existing data connection*. The Examiner cites a memory 420 of Bellinger that stores a channel ID and modem protocols. Nothing in the memory 420 includes data transformation information developed (over the course of the existing data connection) by a data-handling resource. The channel ID and modem protocols are not *developed* by a data-handling resource, and are likely developed *well before* an existing data connection and not *over the course* of an existing data connection. The modem protocols are universal protocols and the channel ID is assigned from a table and not developed. As a result of the failure of these references to disclose this element, as well be explained, the combination would not be able to respond to a failure or removal of the *data handling* resource.

Bellenger's negotiation process would be unable to respond to a failure or removal a first data-handling resource, particularly because Bellenger fails to disclose the memory 420 including data transformation information. As a result, Bellenger's negotiation process requires both DSP 414 and 424 to be functioning for a negotiation to be successful. For example, Bellenger's DSP would not be able to detect or signal its own removal or failure and thus under the Bellenger negotiation process the DSP would be unable to begin a negotiation process in an instance where the DSP itself failed or was removed. The DSP would be unable to signal the DSP controller 404 in the event of a failure or removal of the DSP itself. Bellenger, Figures 13A-13B; col. 36, lines 36-52. Data transformation information (see figure 5 of the present application for an example) would be lost and a user's connection to the internet would be interrupted, for example during an important stock exchange as described in the specification. This inability to negotiate a failure or removal of a data handling resource is a direct result of the lack of an internal state memory that stores internal state information for an existing data connection. Thus combining the references, as the Examiner suggests, is to no avail. Applicant therefore respectfully requests that this

rejection be withdrawn and the pending claims be allowed to issue.

Claim 1 further recites internal state information containing data transformation and data link control information developed by a data handling resource over the course of the existing data connection...where the internal state information is savable and retrievable over a bus separate from the data bus. Claims 14, 19, 22, 25, 27 and 28 recite similar limitations.

Bilba does not cure these deficiencies. First Bilba does not disclose internal state information *containing data transformation ...* developed by a data-handling resource over the course of the existing data connection. Second, with regard to link control information, the Examiner alleges that Biba discloses the recited *data link control information*, specifically that Biba's channel bridge 18 stores data from the frame acknowledgment field 336. Oct. 26, 04, Office Action, Page 7. Channel bridge 18, however, discloses temporarily storing packets long enough to relay them between two channels, not to maintain the recited data link control information of a data-handling resource. Biba, col. 16, line 68 - col. 17, lines 22 (where channel bridge 18 only checks the channel field 314 and performs a cyclic redundancy check prior to bridging the packet between channels). Biba further does not disclose the recited *bus separate from the data bus* to save and retrieve the internal state information, as Biba's channel bridge 18 receives packets over the connection. Since, Biba does not disclose storing a data-handling source's data link information within an internal state information memory, Biba does not anticipate claims 1, 14, 19, 22, 25, 27 and 28, or their corresponding dependent claims.

Furthermore, even if Biba taught the data link control information, this combination would not have provided motivation for an improved data connection handling since Bellenger DSP 414 or 424 uses bus 410A-D to access local control 404 and provide data to the connection. Bellenger, Figure 4. Thus combining the references, as the Examiner suggests, is to no avail. Applicant therefore respectfully requests that this rejection be withdrawn and the pending claims be allowed to issue.

Even if Bellenger, Osler and Biba could be combined, the combination would not be as robust as the data communication interface of claim 1 for several reasons. First, the system that the Examiner cites in Fig. 4 of Bellenger requires *all three* of the DSP 414, DSP 424 and control 404 to be available to "orchestrate" the transfer a connection from DSP 414 to DSP 424. See Bellenger, col. 13, lines 17-25.). Thus if one of the three elements is not functioning properly, a transfer can not be completed. In contrast, the interface of claim 1 is more robust because only *two of the three* need to be functioning properly to make a transfer. For example, the interface of claim 1 can direct a first data connection to the second data-

handling resource while only the controller and the second data-handling resource are functioning based on an independent communication between the controller and the second data-handling resource. Second, the system in Bellenger must avoid allowing a DSP to reach peak traffic conditions. See Bellenger col. 12, lines 48-67. Accordingly the system in Bellenger must transfer a communication *in anticipation* of peak traffic conditions being met. Thus a transfer might take place even if peak traffic conditions are never in fact met. Transfers can take up to three seconds. In contrast, the interface of claim 1 can wait until a first data-handling resource actually fails due to high traffic and *after failure*, transfer a communication to a second data-handling resource. Thus the present interface is more robust because the present interface does not needlessly transfer communications, it has the robustness to wait until a failure develops before transferring.

Claim 28 recites periodically saving internal state information from an active data-handling resource in a location separate from said data-handling resource. Bellenger does not disclose this limitation, as allocated DSPs 414 or 424 only save session parameters after rate negotiations, not periodically as the claims require. Bellenger, Figures 13A-B; col. 36, lines 31-33 and 60-64. Since Bellenger does not disclose periodically saving internal state information, Bellenger does not anticipate claim 28, or its corresponding dependent claims.

Claim 15 specifies the N+1th data-handling resource is only assigned data from said first data connection in response to said one or more conditions. Bellenger fails to disclose this limitation, as DSP 424 is allocated responsive to the capacity of DSPs 414. Bellenger, Figures 12A-B and 13A-B.

Claim 32 recites varying the periodical saving of internal state information depending on the data connection load handled by the data communication interface. As disclosed above with respect to claim 28, Bellenger fails to teach periodic saving of internal state information, much less the varying the periodic saving responsive to the data connection load.

The Examiner rejects claims 3 and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over Bellenger in view of Biba in further view of Green. With regard to claims 10 and 11, neither Bellenger, Biba, nor Green indicates a teaching or suggestion of a simultaneous transfer of multiple connections between resources.

New Claims


New claims 36-39 have been added. Support for new claim 36 is included in the present specification both in Figure 5 and on page 14, lines 5-23. Support for new claim 37 is provided in Figure 5, on page 14, lines 5-23, and on page 3 lines 3-5. Support for new claim

38 is included on page 7, lines 9-13. Support for new claim 39 is included on page 9, lines 8-16.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-11 and 14-35 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,



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Jessica Steinberg

Annotated Sheet Showing Changes

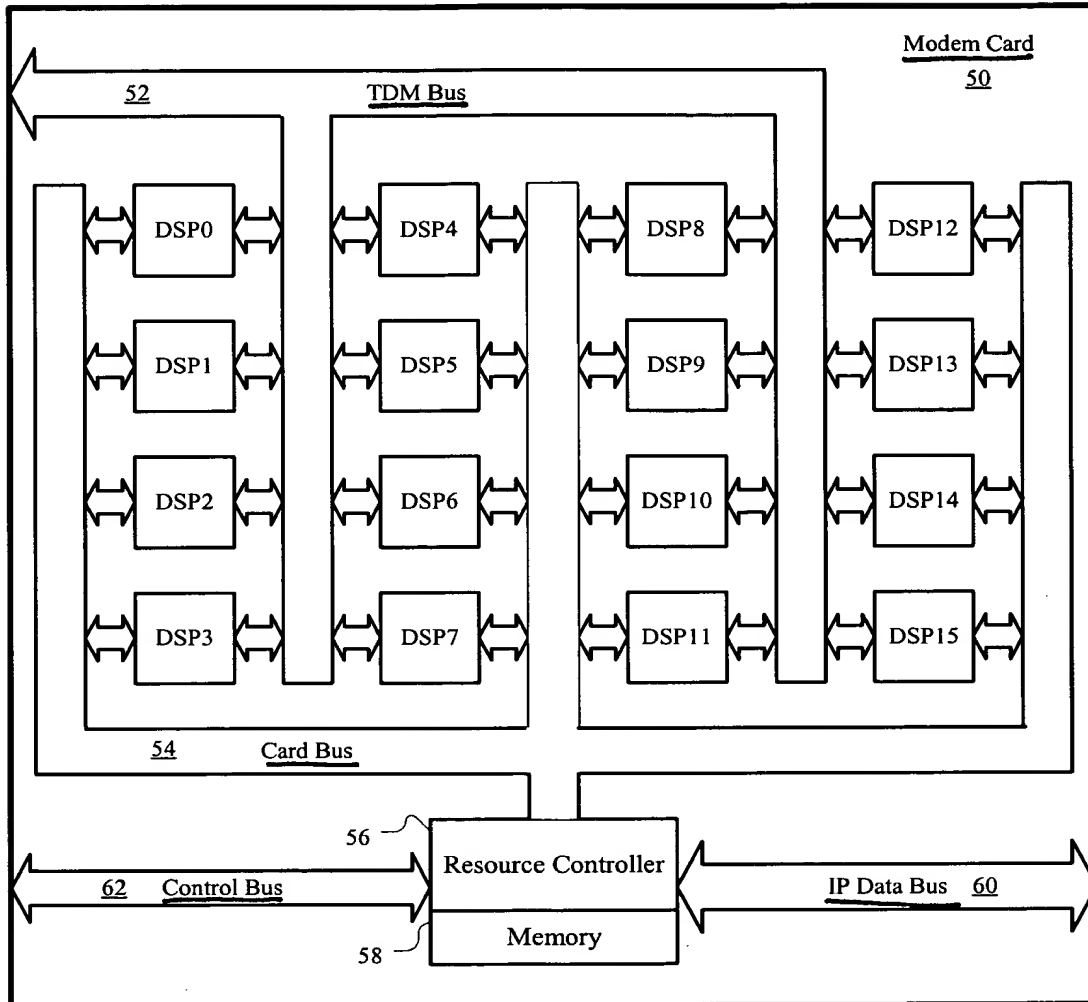


FIG. 3

Annotated Sheet Showing Changes

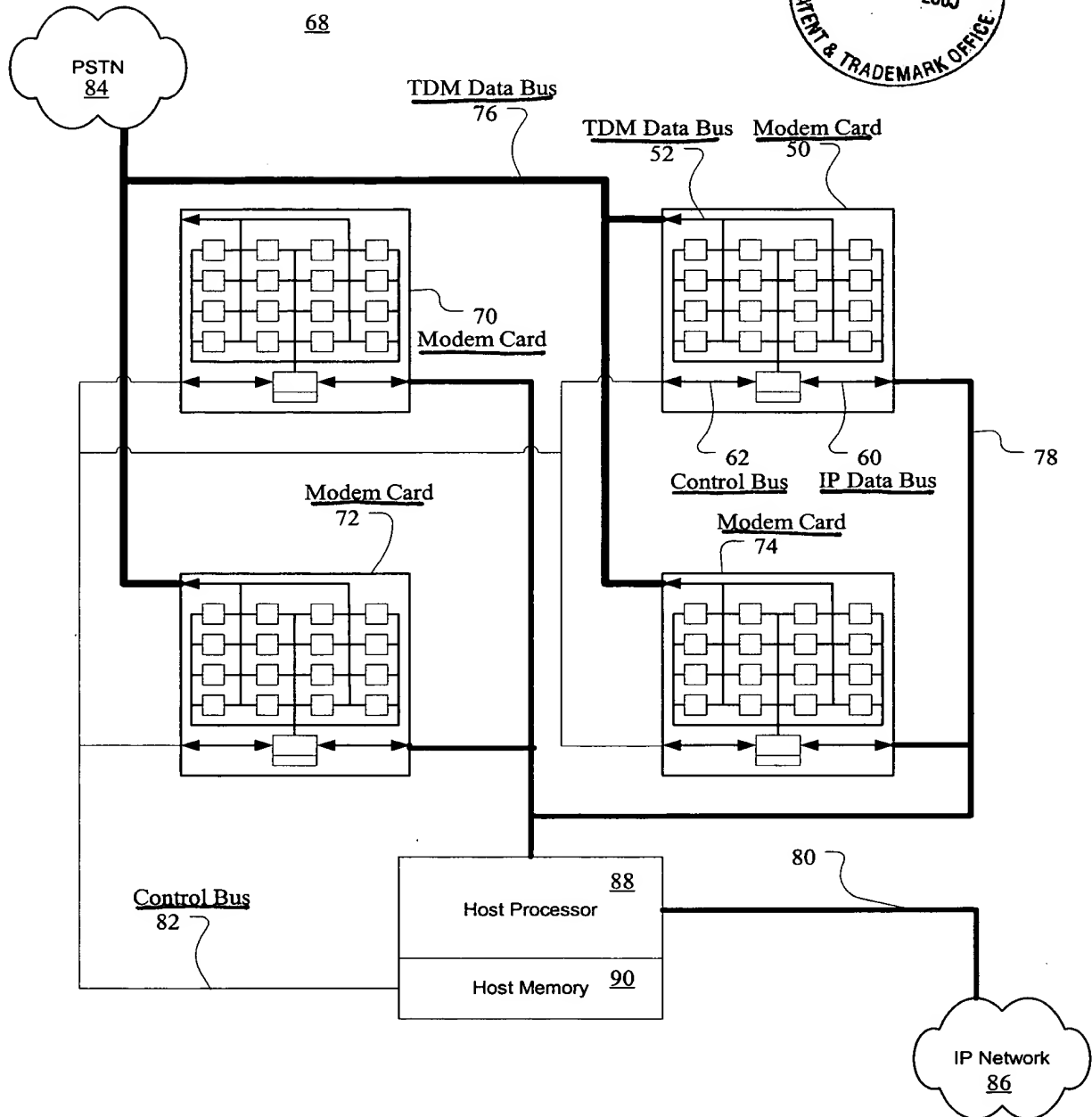
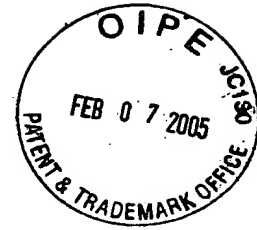


FIG. 4